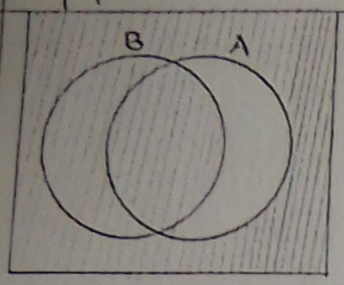
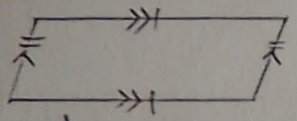
MATHEMATICS MARKING GUIDE

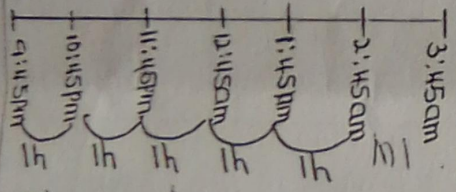
1. 156 M1
+ 44
200 A1

2. $\frac{2}{1} - \frac{1}{4}$
$\frac{(4\times2)-(1\times1)}{4}$ M1
$\frac{8-1}{4}$
$\frac{7}{4}$
$\frac{3}{4}$ A1

3. 

B2

4. 
No line of symmetry B2

5. 

M1
5hours A1

6. $3x - 2 = -6$ B2

7. $1 - \frac{3}{7}$ M1
$\frac{7}{7} - \frac{3}{7}$
$\frac{7-3}{7}$
$\frac{4}{7}$ A1

8. $2^n - 1$ = no. of proper subsets
$2^n - 1 = 7$ M1
$2^n - 1 + 1 = 7 + 1$
$2^n = 8$
$2^n \rightarrow 3$
$= 2$
$n = 3$
$n(x) = 3$ A1

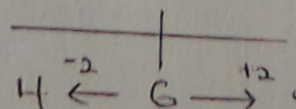
9. 1km = 1000m
3.6km = $\frac{3.6}{10} \times 1000m$
= 3600m
$\frac{3600}{15}$ M1
240 bags A1

10. 216, 125, 64, 27, 8 A1
6^3 5^3 4^3 3^3 2^3 M1

11. $V = \pi r^2 h$
$V = \frac{22}{7} \times 1400 \times 1400 \times 700$
$V = \frac{3018400000000 cm^3}{7}$
$V = 431200000000 cm^3$ B1
$C = \frac{V}{1000 cm^3}$
$C = \frac{431200000000}{1000}$
C = 4312.000 Litres B1

12. TTH TH H T O
3 6 0 1 3
$(3\times10,000) + (6\times1000) + (1\times10) + (3\times1)$ B2

13. 3.401 M1
2.000
+ 0.100
5.501 A1

14. 

4 ← 6 → 8
L = 11 − L
L = 8 − 4 M1
L = 11 A1

15. $I = p \times r \times t$
$I = sh.\ 800,000 \times \frac{6}{100} \times 1\frac{1}{2}$ M1
I = sh. 72.000 A1

16. 12:20am
H min
12 20 M1
−12 00
00 20hours A1

17. 11:15pm — 12:20am
H min
12 00
−11 15
45
1hour 5minutes

H min
45 M1
+ 20
1 05
A1

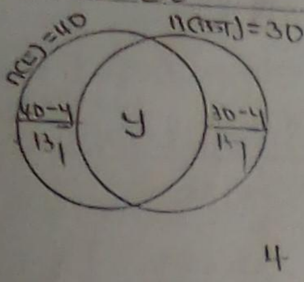
18. Fraction left
$1 - \frac{2}{3}$
$\frac{3}{3} - \frac{2}{3}$
$\frac{3-2}{3}$
$\frac{1}{3}$
40km ÷ $\frac{1}{3}$ M1
40km × 3
120km A1

19. When x = −2
$Y = x - 2$
$Y = -2 - 2$
$Y = -4$ B1
When Y = −2
$X - 2 = Y$
$X - 2 = -2$
$X = -2 + 2$
$X = 0$ B1

20. $(2y - 3) - (5 - y)$ M1
$2y - 3 - 5 + y$
$2y + y - 3 - 5$
$3y - 8$ A1

21

$n(E) = 60$



$y = (40+30+4) - 60$ M1

$y = (74) - 60$

$y = 74 - 60$

$y = 14$ A1

c) $SSP = 60$

$DC = (40-y) + (30-y)$

$DC = (40-14) + (30-14)$

$DC = 26+16$

$D = 42$

$P = \frac{DC}{SSP}$

$P = \frac{42}{60}$ B1

22 a)

Selling	Buying
100% + 10% 110%	100%

sh. 132,000

110% ⟶ sh. 132,000

1% ⟶ sh. $\frac{132000}{110}$

100% ⟶ sh. $\frac{132000}{110} \times 100$ M1

sh. 120,000 A1

b) 50kg ⟶ sh. 132,000

1kg ⟶ sh. $\frac{132000}{50}$ M1

sh. 2640 A1

23. Base Five

+	1	4
2	3	11
3	4	12

$1+2 = 3$

$3+1 = 4$

$3+4 = 7$

$7 \div 5 = 1$ rem 2

b) $2K0_{eight} = 31_{six}$

$(2\times8^1) + (K\times8^0) = (3\times6^1) + (1\times6^0)$ M1

$(2\times8) + (K\times1) = (3\times6) + (1\times1)$

$16 + K = 18+1$

$16 + K = 19$

$K = 19 - 16$ M1

$K = 3$ A1

24.

1st	2nd	3rd	4th
p−7	p−5	p−3	p−1

$\frac{p-5+p-3}{2} = 13$ M1

$\frac{p+p-5-3}{2} = 13$

$\frac{2p-8}{2} = 13$

$2\frac{(2p-8)}{2} = 13\times2$

$2p-8 = 26$

$2p = 26+8$ M1

$2p = 34$

$\frac{2p}{2} = \frac{34}{2}$

$p = 17$ A1

1st no
p−7
17−7
10

2nd no
p−5
17−5 B1
12

3rd no
p−3
17−3
14

4th no
p−1
17−1
16 B1

25.

Kakeeto

CP = 100% ⟶ sh. 5000000

SP = 100% − 20%

80% B1

Kakembo

CP = 100%

SP = 100% + 25%

= 125% B1

Kawesi

CP = 100%

SP =

100% ⟶ sh. 5000,000

1% ⟶ sh. $\frac{5000\,000}{100}$

80% ⟶ sh. $\frac{5000,000}{100} \times 80$

sh. 4000,000 B1

100% ⟶ sh. 4000,000

1% ⟶ sh. $\frac{4000\,000}{100}$

125% ⟶ sh. $\frac{4000\,000}{100} \times 125$ M1

sh. 5000,000 A1

26) $S = 80$ km/h $T = 3\frac{1}{2}$ h
Jinja $D = 280$ km
Busia 30 min
$S =$ $T = 2\frac{1}{4}$
$D = 280$ km

$D = S \times T$
$D = (80 \times 3\frac{1}{2})$ km M1
$D = 280$ km A1

b) Ave S = T.D / T.T

$= \frac{280 km + 280 km}{3\frac{1}{2} + 2\frac{1}{4} + \frac{1}{2}}$ M1

$= \frac{560}{6\frac{1}{4}}$

$560 \div \frac{25}{4}$

$560 \times \frac{4}{25}$ M1

$\frac{2240}{25}$

$89\frac{15}{25}$

$89\frac{3}{5}$ km/h A1

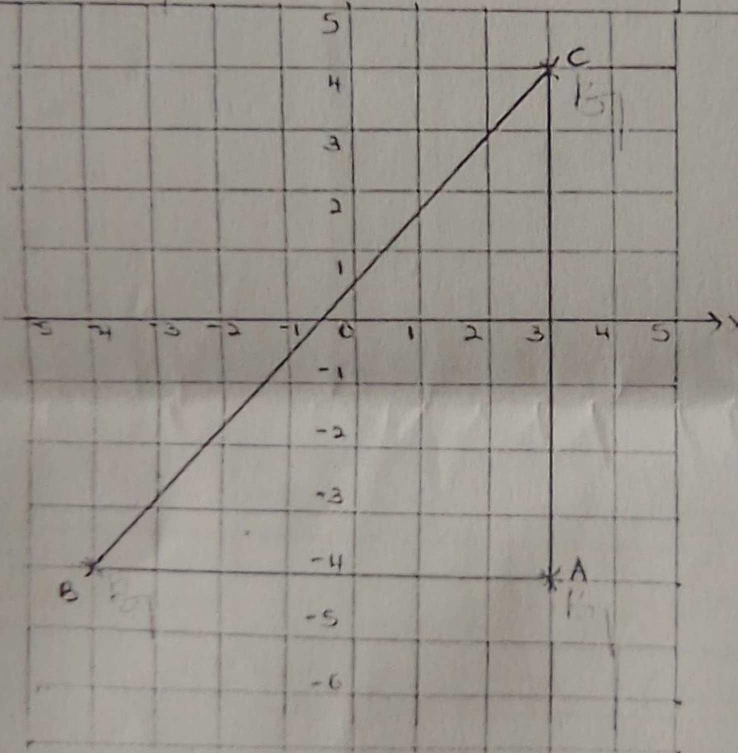
27 a) $-3a^2 + a^2 + 2a^2$ M1
$-3a^2 + 3a^2$
0 A1

b)

	Bettus	Muneke
Now	4k	k
10 yrs	4k+10	k+10

$2(k+10) = 4k+10$ M1
$2k+20 = 4k+10$
$20-10 = 4k-2k$ M1
$10 = 2k$
$\frac{10}{2} = \frac{2k}{2}$
$5 = k$
$k = 5$ year A1

28



b) $A = \frac{1}{2}bh$

$A = \frac{1}{2} \times 7$ sq $\times 8$ sq M1

$A = 7$ sq $\times 4$ sq

$A = 28$ sq units A1

29 Volume of the outer cylinder
$V = \pi r^2 h$
$V = (\frac{22}{7} \times \frac{28}{2} \times \frac{28}{2} \times 35)$ cm³ M1
$V = (22 \times 14 \times 14 \times 5)$ cm³
$V = 21560$ cm³ A1

Volume of the inner cylinder
$V = \pi r^2 h$
$V = (\frac{22}{7} \times \frac{14}{2} \times \frac{14}{2} \times 35)$ cm³ M1
$V = (22 \times 7 \times 7 \times 5)$ cm³
$V = 5390$ cm³ A1

vol of the concrete
21560 cm³
− 5390 cm³
16170 cm³
B1

30. $\left(\frac{24}{100} \times \frac{8}{100}\right) \div \left(\frac{2}{10} \times \frac{4}{10}\right)$ m/l

$\frac{24}{100} \times \frac{8}{100} \times \frac{10}{2} \times \frac{10}{4}$ m/l

0.24 A1

Selling	Buying
100% + 20%	100%
120%	

Sh. 36000

120% → Sh. 36000

1% → Sh. $\frac{36000}{120}$

100% → Sh. $\frac{36000}{120}$ m/l

300 × 100

Sh. 30000 A1

31. $(200 - 70) \times 2.6$ m/l

130×2.6

338 A1

b) $\frac{106}{100} \times \frac{1}{1000}$ m/l

$\frac{106}{100\,000}$

0.00106 A1

32.

Int∠	ext∠	sum
$k + 36°$	k	180°

$\frac{1}{5} \times 180°$

36°

$k + 36° + k = 180°$ m/l

$k + k + 36° = 180°$

$2k + 36° = 180°$

$2k + 36° - 36° = 180° - 36°$

$2k = 144°$

$\frac{2k}{2} = \frac{144°}{2}$

$k = 72°$ A1

No. of sides $= \frac{360°}{\text{ext}\angle}$

$= \frac{360}{72}$

= 5 sides B1

b) Int∠ sum $= 180°(n - 2)$

$= 180°(5 - 2)$ m/l

$= 180° \times 3$

$= 540°$ A1